

**Abstract of the Disclosure**

An apparatus and method is provided for compensating for the difference between the phase relation among signals at the point of generation and the phase relation among the signals after time division multiplexing when the signals are

5 processed according to the time division multiplexing. In a system which transmits a plurality of signals according to the time division multiplexing, the apparatus includes a phase transition filter group having as many phase transition filters as the plurality of signals. Each of the phase transition filters performs filtering to generate a signal having a phase transitioned with respect to an input

10 signal based on phase information. The apparatus also includes a multiplexing unit for providing phase information, which are assigned to each of the plurality of signals according to the time division multiplexing, to the phase transition filter group and time division multiplexing a plurality of signals transmitted from the phase transition filter group. Accordingly, the phase relation among the

15 plurality of signals at the point of generation is the same as the phase relation among corresponding signals obtained after the time division multiplexing.